

REMARKS

By this Amendment, claims 32, 34 and 37 are amended, claims 38-41 are added. Claims 35-36 remain in the application. Thus, claims 32 and 34-41 are active in the application. Reexamination and reconsideration of the application are respectfully requested.

Minor editorial revisions were made to the specification to correct grammatical and idiomatic errors in order to aid the Examiner in further consideration of the application. The Applicants submit that no new matter has been added via these editorial revisions.

In item 5 on page 2 of the Office Action, claims 32, 34 and 36-37 were rejected under 35 U.S.C. § 102(e) as being anticipated by Vallone et al. (U.S. 6,642,939). Further, in item 9 on page 4 of the Office Action, claim 35 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Vallone et al. in view of a declaration of “Official Notice” that it is well known to provide data in an HTML format.

The Applicants thank the Examiner for kindly conducting the March 18, 2005 interview with the Applicants’ representatives. The Applicants’ representatives argued that Vallone et al., despite the Examiner’s assertion to the contrary, does not disclose or suggest receiving broadcast data, where the broadcast data includes both a plurality of multimedia data and attribute information which respectively corresponds to the plurality of received multimedia data. In response to the representatives’ arguments that Vallone et al. clearly does not recite the attribute information recited in claims, the Examiner, without referencing Vallone et al. or any of the references of record, indicated that including attribute information with broadcast data of multimedia data is well known in the art. Thus, no agreement could be reached with respect to the claims.

If, after reviewing this Amendment, the Examiner maintains his interpretation of Vallone et al. in view of the asserted “well known” feature of receiving broadcast data including both a plurality of multimedia data and attribute data, the Applicants respectfully request that the Examiner produce a reference definitively showing such a “well known” feature.

Without intending to acquiesce to these rejections, independent claims 32 and 37 have each been amended in order to more clearly illustrate the marked difference between the present invention and the applied reference.

The present invention provides a broadcast data receiving device and method for receiving and outputting broadcast data including a plurality of multimedia data and attribute information. In the present invention, the multimedia data is superposed on a broadcast wave in which management information is generated such that the multimedia data and the attribute information, which is previously included in the broadcast data, are associated with each other.

Further, the attribute information is a table of information respectively corresponding to the plurality of multimedia data which are included in the broadcast data. For instance, as illustrated in Figure 6, the attribute information is a table including a plurality of attributes of each of the plurality of multimedia data.

Claim 32 recites the broadcast data receiving device of the present invention, and claim 37 recites the broadcast data receiving method of the present invention. The device and method of claims 32 and 37 are recited as receiving and outputting broadcast data including a plurality of multimedia data and attribute information. Claims 32 and 37 each recite sequentially receiving the plurality of multimedia data and the attribute information included in the broadcast data on a designated broadcast channel.

Claims 32 and 37 also each recite creating and storing management information for collectively managing the plurality of received multimedia data and the attribute information included in the broadcast data, where the attribute information is a table of information respectively corresponding to the plurality of received multimedia data, and the multimedia data and the attribute information are kept under management in association with each other.

Accordingly, claims 32 and 37 each recite receiving broadcast data, where the broadcast data includes both a plurality of multimedia data and attribute information, which is a table of information respectively corresponding to the plurality of received multimedia data.

Vallone et al. discloses receiving multimedia data (input streams) in the form of digital TV signals (MPEG) or analog TV signals (see Column 5, lines 6-20). However,

for the following reasons, Vallone et al. clearly does not receive broadcast data which includes both multimedia data and attribute information.

Vallone et al. discloses that the input streams (digital or analog TV signals) are converted into an MPEG stream by the input module 101, and the converted MPEG streams are sent to a media switch 102. The media switch 102, 205 buffers the MPEG stream into memory. If the user is watching live TV, the media switch 102, 205 sends the MPEG stream to an output section 103, and writes the MPEG stream simultaneously into the hard disk 105 (see Column 5, lines 36-43). The output section 103 then takes the inputted MPEG streams and produces an analog TV signal according to conventional TV standards. Vallone et al. discloses that an On-Screen Display generator of the output section 103 uses its program logic to supply images which may be overlaid on top of the resulting analog TV signal (see Column 5, lines 44-54).

Vallone et al. also discloses that the incoming media stream 301 includes interleaved video 302, 305, 306 and audio 303, 304, 307 segments. The interleaved video and audio segments must be separated and recombined to create separate video 308 and audio 309 streams. Time sequence information (time stamp) is then generated because separate decoders are required to convert MPEG elements back into audio or video analog components. The media switch 205 uses its program logic to associate proper time sequence information for each of the video and audio segments, possibly embedding the appropriate time sequence information into each segment (see Column 5, line 65 to Column 6, line 18 and Figure 3).

The media switch 205 includes four Direct Memory Access (DMA) engines 402-405 each having an associated buffer 410-413, respectively, which are each dedicated to a specific type of data such as video 402, audio 403 and parsed events 405. Vallone et al. discloses that each input stream is inputted into a parser 401 which parses the input stream to look for MPEG distinguished events indicating the start of video, audio or private data segments. Upon finding a particular event, the parser 401 directs the stream to one of the DMA engines having the associated buffer which is specifically dedicated to the found event. For instance, when the parser 401 finds a private data event in the input stream, the parser directs the input stream to the DMA engine 405 having an event buffer

413 which is specifically dedicated to private data events (see Column 6, lines 30-61 and Figures 4-6).

Accordingly, Vallone et al. discloses that when a stream (e.g., MPEG2) is inputted to the media switch 205, the media switch 205 separates the received stream into video data, audio data and private data by passing the stream through the parser 401. At the same time, event data 501 is generated from the stream with respect to each data, i.e., the video data, the audio data and the private data (see Column 6, lines 45-61).

Each event data 501 in the event buffer 413 has an address offset 502, an event type 503 and a time stamp 504 field. The offset 502 in the event 501 allows the program logic to find the event in the inputted MPEG stream. The event type 503 in the event allows the program logic to identify what type of event, such as audio information, is present in the inputted MPEG stream (see Column 6, line 62 to Column 7, line 7 and Figures 4-5). The event buffer 413, 601 is filled with events while the inputted MPEG stream passes through the parser 401. When the event buffer 413, 601 is interrupted by the media switch 102, 205, 601, the program logic of the media switch 102, 205, 601 reads the accumulated events. From these accumulated events, the program logic generates a sequence of logical segments 603 which correspond to the parsed MPEG segments 615.

The Examiner refers to Column 7, lines 24-38 to conclude that Vallone et al. receives broadcast data which includes both multimedia data and attribute information. Column 7, lines 24-38 provides:

The program logic continues collecting [generated] logical segments 603 until it reaches the fixed buffer size. When this occurs, the program logic generates a new buffer, called a Packetized Elementary Stream (PES) 605 buffer containing these logical segments 603 in order, plus ancillary control information. Each logical segment points 604 directly to the circular buffer, e.g., the video buffer 613, filled by the Media Switch 601. This new buffer is then passed to other logic components, which may further process the stream in the buffer in some way, such as presenting it for decoding or writing it to the storage media. Thus, the MPEG data is not copied from one location in memory to another by the processor. This

results in a more cost effective design since lower memory bandwidth and processor bandwidth is required.

Accordingly, Vallone et al. discloses that each value in, for example, video data is converted into a logical value and is stored to a PES buffer.

Vallone et al. discloses that the parser 401, 705 detects the beginning of all important events in a video or audio stream, such as the start of frames or the start of sequence headers, and places tags 707 into the logical segments when the parser is given video or audio segments, or private data (see Column 8, lines 8-30).

Vallone et al. also discloses that once a closed caption (CC) is received in analog inputted streams, the parser extracts a word from the CC, and a special segment is added to a PES buffer to establish time synchronization between the word and video and audio data. A start timing and end timing of the word is determined with reference to a previously-prepared word-state table (see Column 12, lines 5-34 and Figure 12).

Accordingly, Vallone et al. merely discloses that input streams (multimedia data) are received and that the “attribute information” (i.e., event data 501 including address offset 502, an event type 503 and a time stamp 504 fields of the events) is generated after the received input streams are parsed by the parser 401.

Therefore, Vallone et al. clearly does not disclose or suggest receiving and outputting broadcast data including a plurality of multimedia data and attribute information, and sequentially receiving the plurality of multimedia data and the attribute information included in the broadcast data on a designated broadcast channel, as recited in claims 32 and 37.

Furthermore, Vallone et al. clearly does not disclose or suggest that the attribute information is a table of information respectively corresponding to the plurality of received multimedia data, as recited in claims 32 and 37.

Accordingly, for at least the foregoing reasons, Vallone et al. clearly does not disclose or suggest each and every limitation of claims 32 and 37.

Therefore, claims 32 and 37 are clearly not anticipated by Vallone et al. since Vallone et al. fails to disclose each and every limitation of claims 32 and 37.

Moreover, in view of the clear distinctions discussed above, the Applicants respectfully submit that a person having ordinary skill in the art at the time the invention

was made would not have been motivated to modify Vallone et al. in such as manner as to result in, or otherwise render obvious, the present invention as recited in claims 32 and 37.

Therefore, it is submitted that the claims 32 and 37, as well as claims 34-36 and 38-41 which depend therefrom, are clearly allowable over the prior art as applied by the Examiner.

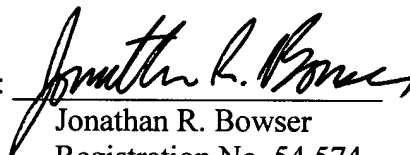
In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

A fee and a Petition for a three-month Extension of Time are filed herewith pursuant to 37 CFR § 1.136(a).

Respectfully submitted,

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